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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,941	07/10/2003	Kazuki Takemoto	03560.003339	1080
5514	7590	08/23/2005		
			EXAMINER	
			BRIER, JEFFERY A	
			ART UNIT	PAPER NUMBER
			2672	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/615,941	TAKEMOTO ET AL.	
	Examiner	Art Unit	
	Jeffery A. Brier	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 4/29/05 & 6/16/05.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-19 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 26 April 2005 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____

5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____

Detailed Action

Response to Amendment

1. The amendment filed on 4/29/2005 and 6/16/2005 have been entered.

The objection to the title is overcome by applicant's amended title.

Response to Arguments

2. The objection to figures 7 and 11 are withdrawn in view of applicants arguments filed on 4/29/2005.
3. The arguments filed on 4/29/2005 concerning claim 10 and the Kitamura article have been fully considered, however, they are deemed not to be persuasive. Claim 10 does not have an image taking step and thus does not claim the obtaining a constraining shape is separate from the image taking step. Therefore Kitamura teaches this broad method.
4. The arguments concerning the 35 USC 112 second paragraph rejection of claims 9 and 15 is not persuasive. Claim 9 depends upon claim 8 which claims A computer program, wherein the information processing method according to Claim 5 is executed by a computer device. A connection between the computer program and the wherein clause does not exist, thus, a computer program has not been claimed, just the words "A computer program" is claimed. The same argument applies to claim 15. Applicant needs to amend claims 8, 9, 14, and 15 to better claim a computer-readable recording medium embodying computer instructions causing a computer to perform the claimed method. Claims 8 and 14 claim a program per se and cannot be allowed as such.

Claims 9 and 15 do not claim what type of computer program is stored, thus, they are non functional descriptive material.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-9 and 16-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1:

At line 4 "in real space" , at line 5 "on real space" and at line 10 "in real space" is claimed, however, the claim does not clearly the claim the third occurrence of "real space" is a new claim limitation or is further limiting the first occurrence of "real space". The examiner suggests changing at line 5 "on real space" to "on said real space" and changing at line 10 "in real space" to "in said real space" to make the claim clearly claim the user is inputting 3D position in the real space of the image taken by the image taking means.

At line 3 "three-dimensional space" and at lines 9 and 13 "three-dimensional position information" is claimed and as discussed above "real space" is claimed at lines 4, 5, and 10. A correlation between "three-dimensional space", "three-dimensional

position information" and "real space" is needed to clearly claim controlling the position and orientation of the virtual object.

At lines 16-17 "the user's instructions is claimed and lacks antecedent basis in the claims.

Claims 3 and 18:

These dependent claims were amended to claim "at least one of the following operations... translation.... and ...rotation". In view of *Superguide Corp. v. DirecTV Enterprises, Inc.* and *IPXL Holdings LLC v. Amazon.com Inc.* this claim does not clearly claim the described invention since this phrase is inclusive rather than alternative. The specification did not specifically state the number of times both translation and rotation occurs. The specification describes with regard to step 8010 correcting the position and orientation of the virtual object. *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 69 USPQ2d 1865, 1878 (Fed. Cir. 2004). Page 1878 states:

We agree with DirecTV. The phrase "at least one of" precedes a series of categories of criteria, and the patentee used the term "and" to separate the categories of criteria, which connotes a conjunctive list. A common treatise on grammar teaches that "an article of a preposition applying to all the members of the series must either be used only before the first term or else be repeated before each term." Willaim Strunk, Jr. & E. B. White, *The Elements of Style* 27 (4th ed. 2000). Thus, "[i]n spring, summer, or winter" means "in spring, in summer, or in winter." *Id.* Applying this grammatical principle here, the phrase "at least one of" modifies each member of the list, i.e., each category in the list. Therefore, the district court correctly interpreted this phrase as requiring that the user select at least one value for each category; that is, at least one of a desired program start time, a desired program end time, a desired program service, and a desired program type.

IPXL Holdings LLC v. Amazon.com Inc., 72 USPQ2d 1469, 1480 (DC EVa 2004)

makes a decision similar to SuperGuide. Page 1480 states:

The parties dispute whether “user defined transaction information” requires both a “user defined transaction” *and* a “user defined transaction parameter” as Amazon contends, or only one of either a “user defined transaction” *or* a “user defined transaction parameter,” as IPXL contends. For the reasons set forth below, the Court finds that IPXL misreads both the plain words used in the claim as well as Federal Circuit precedent in arguing for its interpretation. In construing the very same language, the Federal Circuit construed “at least one of” to mean what Amazon has argued. The phrase “at least one of” precedes a series of categories of criteria, and the patentee used the term “and” to separate the categories of criteria, which connotes a conjunctive list. A common treatise on grammar teaches that “an article of a preposition applying to all the members of the series must either be used only before the first term or else be repeated before each term.” William Strunk, Jr. & E.B. White, *The Elements of Style* 27 (4th ed. 2000).... Applying this grammatical principle here, the phrase “at least one of” modifies each member of the list, i.e., each category in the list. Therefore, the district court correctly interpreted this phrase as requiring that the user select at least one value for each category.... *SuperGuide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 886 [69 USPQ2d 1865] (Fed. Cir. 2004).

CAFC decision Brown v. 3M, 265 F.3d 1349, 60 USPQ2d 1375 (Fed. Cir. 2001)

This decision found that the term “or” in claim 16 in the *at least one of two-digit, three-digit, or four-digit year-date representations* phrase is to be read in the alternative when read in light of the specification. Page 1378 states:

The district court construed the word “or” in claim 16 as meaning that the apparatus was capable of converting “only two-digit, only three-digit, only four-digit, or any combination of two-, three-, and four-digit date-data.” Slip op. at 9. We agree with this construction of the claim, for it is the plain reading of the claim text. These are not technical terms of art, and do not require elaborate interpretation. There is no basis in the specification or prosecution history for reading “or” as “and” — nor does Dr. Brown request such a reading.

Claims 4 and 19:

These claims were amended to claim "real time" however, the specification does not use the phrase "real time" and paragraph 0036 appears to suggest "real time" but not "real time in accordance with the user's instructions".

Claim 5:

This claim has the same indefinite issues that claim 1 has.

At line 4 "in real space" , at line 6 "on real space" and at line 9 "in real space" is claimed, however, the claim does not clearly the claim the third occurrence of "real space" is a new claim limitation or is further limiting the first occurrence of "real space". The examiner suggests changing at line 6 "on real space" to "on said real space" and changing at line 9 "in real space" to "in said real space" to make the claim clearly claim the user is inputting 3D position in the real space of the image taken by the image taking step.

At lines 2- 3 "three-dimensional space" and at lines 8 and 13 "three-dimensional position information" is claimed and as discussed above "real space" is claimed at lines 4, 6, and 9. A correlation between "three-dimensional space", "three-dimensional position information" and "real space" is needed to clearly claim controlling the position and orientation of the virtual object.

At line 17 "the user's instructions is claimed and lacks antecedent basis in the claims.

Claim 16:

This claim has the same indefinite issues that claim 1 has.

At line 4 "in real space", at line 5 "on real space" and at line 9 "in real space" is claimed, however, the claim does not clearly claim the third occurrence of "real space" is a new claim limitation or is further limiting the first occurrence of "real space". The examiner suggests changing at line 5 "on real space" to "on said real space" and changing at line 9 "in real space" to "in said real space" to make the claim clearly claim the user is inputting 3D position in the real space of the image taken by the image taking step.

At line 3 "three-dimensional space" and at lines 8 and 11 "three-dimensional position information" is claimed and as discussed above "real space" is claimed at lines 4, 5, and 9. A correlation between "three-dimensional space", "three-dimensional position information" and "real space" is needed to clearly claim controlling the position and orientation of the virtual object.

At line 13 "the user's instructions" is claimed and lacks antecedent basis in the claims.

Claim 9:

Claim 9 is indefinite because "the computer program" lacks antecedent basis in the claim. Claim 8 does not claim a computer program, it just has the words computer program because the wherein clause is not connected to the computer program.

Claim 15:

Claim 15 is indefinite because “the computer program” lacks antecedent basis in the claim. Claim 14 does not claim a computer program, it just has the words computer program because the wherein clause is not connected to the computer program.

Claim Objections

7. Claims 8, 9, 14, and 15 are objected to because of the following informalities: The form of these claims are objected as being programs per se rather than computer-readable recording medium embodying computer instructions causing a computer to perform the claimed method. Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 10-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshifumi Kitamura and Fumio Kishino, Consolidated Manipulation of Virtual and Real Objects, September 1997, Proceedings of the ACM symposium on Virtual reality software and technology, pages 133-138. Kitamura teaches an augmented reality system that uses object constraints to control the visual interaction between the virtual objects and the real objects. Claim 10 does not have an image taking step and thus

does not claim the obtaining a constraining shape is separate from the image taking step. Therefore Kitamura teaches this broad method.

A detailed analysis of the claims follows.

Claim 10:

Kitamura teaches an information processing method for changing the position and orientation of a virtual object in mixed reality space obtained by combining a real image and a virtual image, said method comprising the steps of:

obtaining a constraining shape from a plurality of positions in real space designated by a user using an operating unit capable of obtaining three-dimensional positional information (*The three paragraphs found in section 2 on page 134 of Kitamura teaches the user measuring the real objects. Kitamura discusses in section 2 in the first paragraph using conventional modeling software after precisely measuring the size or length of the real object by hand which is an operating unit capable of obtaining three-dimensional positional information.* .);

changing the position and orientation of the virtual object according to instructions from the user, based on the obtained constraining shape as constraint conditions (*The first paragraph in section 5 on page 135 describes the user using a 6 DOF tracker device to manipulate the virtual objects. The shape of the real objects are used to constrain the movement of the virtual object by giving the real object a shape that the virtual object interacts with in a constrained manner. Sections 5.1 to 5.4 discusses manipulation of the virtual object based upon constraint conditions based on*

the shape of the real object. The shape generated from the external instructions constraints the interaction of the virtual object with the real object, see sections 5.1 to 5.4.); and

combining an image of the virtual object generated according to the changed position and orientation, and the real image (*The introduction on page 133 second full paragraph discusses augmented reality which synthesizes a virtual object with a real object. The claim does not limit the form of the real image, thus, Kitamura teaches this limitation. Section 5.1 discusses after movement is detected by the 6DOF manipulator the virtual object is moved according to the constraints.*).

Claim 11:

Kitamura teaches an information processing method according to Claim 10, further comprising the step of combining a virtual image indicating the constraining shape with the real image (*The introduction on page 133 second full paragraph discusses augmented reality which synthesizes a virtual object with a real object. The claim does not limit the form of the real image, thus, Kitamura teaches this limitation. Section 5.1 discusses after movement is detected by the 6DOF manipulator the virtual object is moved according to the constraints.*).

Claim 12:

Kitamura teaches an information processing method according to Claim 10, wherein the constraining shape is a plane. (*On page 136 in the text above figure 2 determining a*

plane and using the plane to constrain movement of the virtual object is discussed with regards to figure 2).

Claim 13:

Kitamura teaches an information processing method according to Claim 10, wherein said changing step changing the position and orientation of the virtual object is carried out by changing the position and orientation of the operating unit (*The 6 DOF tracker is an operating unit. The user using the 6 DOF tracker device manipulates the virtual objects.*).

Claim 14:

Kitamura teaches a computer program, wherein the information processing method according to Claim 10 is executed by a computer device (*This article is directed to computers that generate the augmented reality scene since it was published by ACM for a symposium on virtual reality software and technology and since at page 133 in the last sentence in the second paragraph of section 1 software/hardware is discussed.*).

Claim 15:

Kitamura teaches a computer-readable recording medium, storing the computer program according to Claim 14 (*Software causing a computer to perform Kitamura's augmented reality is inherently stored in a computer readable recording medium.*).

Allowable Subject Matter

10. Claims 1-7, 16-13, and 16-19 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action. The prior art of record fails to teach or suggest taking a real image, superimposing a virtual image with the real image, having the user input positions in real space that are used to form the constraining shape. While Kitamura teaches taking and analyzing a real image for the constraining shape or having the user input the positions for the constraining shape.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffery A Brier whose telephone number is (571) 272-7656. The examiner can normally be reached on M-F from 7:00 to 3:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael

Razavi, can be reached at (571) 272-7664. The fax phone Number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffery A Brier
Primary Examiner
Art Unit 2672